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A New La(III)-Bearing Coordination Polymer: Prevention and Nursing Application on Adverse Reactions in Patients Undergoing Laparoscopic Cholecystectomy

Jing LIU [1], Lin ZHANG [2], Guiping LIU [3], & Longfan PIAO [4] *

[1] *Operating Room, Shangrao People's Hospital, Shangrao, Jiangxi, China*

[2] *Department of Surgery, Liaocheng Third People's Hospital, Liaocheng, Shandong, China*

[3] *Department of Public Health, Third Affiliated Hospital of Xinxiang Medical College, Xinxiang, Henan, China*

[4] *Department of Surgical Nursing, School of Nursing, Yanbian University, Yanji, Jilin, China*

SUMMARY. In the present study, via using a semirigid tripodal polycarboxylic acid ligand 3,5-bis(2-carboxy-phenoxy)-benzoic acid (H_3BCPB), a new La(III)-bearing coordination polymer with the chemical formula of $[La(BCPB)(H_2O)_2]_n$ (**1**) has been successfully prepared via reaction of $La(NO_3)_3 \cdot 6H_2O$ with the H_3BCPB ligand in a mixed solvent of EtOH and water solution. Its application values on the *Staphylococcus aureus* infection after the cholecystectomy was evaluated and the related mechanism was explored at the same time. The two carboxyl groups on the La complex were found to form hydrogen bonds with the protein receptor by performing molecular docking simulations, the strong hydrogen bonding interactions guaranteed excellent biological activity.

RESUMEN. En el presente estudio, mediante el uso de un ligando de ácido policarboxílico tripodal semirrígido ácido 3,5-bis(2-carboxi-fenoxi)-benzoico(H_3BCPB), un nuevo polímero de coordinación portador de La (III) con la fórmula química de $[La(BCPB)(H_2O)_2]_n$ (**1**) se ha preparado con éxito mediante la reacción de $La(NO_3)_3$ $6H_2O$ con el ligando H_3BCPB en una mezcla de disolventes de EtOH y agua. Se evaluaron sus valores de aplicación en la infección por *Staphylococcus aureus* después de la colecistectomía y al mismo tiempo se exploró el mecanismo relacionado. Se encontró que los dos grupos carboxilo en el complejo La forman enlaces de hidrógeno con el receptor de proteína al realizar simulaciones de acoplamiento molecular y que las fuertes interacciones de enlace de hidrógeno garantizan una excelente actividad biológica.

KEY WORDS: coordination polymer, laparoscopic cholecystectomy, molecular docking

* Author to whom correspondence should be addressed. *E-mail:* liujing20210929@163.com

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